Before the

Federal Communications Commission

Washington, D.C. 20554

In the Matter of	)	
Structure and Practices of the Video Relay Service Program	)	CG Docket No. 10-51
Telecommunications Relay Services and Speech-to-Speech Services for Individuals with Hearing and Speech Disabilities	)	CG Docket No. 03-123

Reply-to Comments of the Rehabilitation Engineering Research Center on Telecommunications Access

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I. Introduction

The Telecom RERC (RERC-TA) is a joint project of the Technology Access Program at Gallaudet University and the Trace Center at the University of Wisconsin-Madison. The RERC is funded by the U.S. Department of Education, National Institute on Disability and Rehabilitation Research, to carry out a program of research and development focused on technological solutions for universal access to telecommunications systems and products for people with disabilities.

II. VRS Standards

The RERC-TA is pleased to see widespread support for interoperability standards for VRS. Below we offer some responses that other commenters made with respect to standards, and reiterate a few key points.

A. The SIP Provider Role is Distinct from the VRS Provider Role

A number of comments assume that the VRS provider will also play the role of the SIP provider, which is reinforced by the FCC-provided "videophone interface" diagram in the FNPRM[1]. However, we previously pointed out that the role of the SIP/terminal provider needs to be separate from the role of the VRS provider[2]. Not doing so raises serious problems:

1. There would be no clear path toward interfacing VRS with other IP-based communication environments, most notably the IP Multimedia Subsystem

[1] FNPRM 11-184, Appendix B, at 19

[2] Comments by the Telecommunication RERC, CG Dockets 10-51 and 03-123, 03/09/2012, p. 12

(IMS). It was pointed out by the CSRIC III Workgroup 1, which was tasked with identifying gaps in the standards for next-generation 9-1-1 (NG-9-1-1) that it is currently unclear how IMS will interface with relay services in NG-9-1-1 calls[3]. This issue is not limited to just emergency calls, but to interfacing with IMS in general, and it also applies to any other communication environments that may arise in the future.

2. Enterprises like to standardize on telecommunications equipment and telecommunications providers of their choice, with third party equipment being unsupported, blocked by corporate firewall policies, or even being prohibited outright. Putting the VRS provider in the role of the SIP or terminal provider is incompatible with these requirements, and would result in continued problems with accessing VRS from corporate telecommunications systems.

It follows that there must be sufficient flexibility in VRS access standards to allow for separating the roles of SIP/terminal provider and VRS provider. Not doing so would run counter to the principle of functional equivalence, where relay users again would be left in the situation of not being able to use the same types of telecommunications networks and equipment as the mainstream.

[3] CSRIC III Working Group 1 Final Report, December 2011, page 28. Online http://transition.fcc.gov/bureaus/pshs/advisory/csric3/CSRICWG1SG12ReportFINAL.pdf

B. Distinguishing between "Interoperability" and "Equipment Portability" Standards is Unwarranted

We disagree that it is appropriate to distinguish between interoperability and equipment portability standards, and that the former have a higher priority[4]. As we noted in the previous section, there are situations where users must be able to contact relay services through communication environments that are not under the direct control of VRS providers. In these scenarios, for functional equivalence, it is important to have the full set of standards implemented (which Sorenson labels as pertaining to "equipment portability," even though they have nothing to do with porting equipment from one VRS provider to another, but rather with the interoperability of IP-based communication environments with VRS). It is limiting to assume that portability from one VRS provider to another one will merely entail downloading a software application from the respective provider, which ignores the possibilities of connecting to VRS via the native communication functionality of third-party devices, communication environments like IMS, or through third-party SIP providers.

C. VRS Standards Must Align with NG-9-1-1

The Emergency Access Advisory Committee (EAAC) noted in its recommendations that TRS must be fully interoperable with the NG-9-1-1 standards[5]. This means that many of the choices of standards for VRS will be dictated by the NENA i3 Solution and IETF phonebcp, because these are what NG-9-1-1 will use. In addition, it has been noted by consumer advocates that call routing to the appropriate PSAP in 9-1-1 calls continues to

[4] Comments by Sorenson Communications, CG Dockets 10-51 and 03-123, 03/09/2012, p. 63

[5] EAAC report and recommendations, Recommendation T7.8, p. 38.

be a huge problem[6], part of which is caused by the difficulties of integrating location finding and routing mechanisms by VRS providers into the existing 9-1-1 routing mechanisms. Rather than letting VRS providers use their own mechanisms for 9-1-1 call routing, it makes much more sense for them to support the corresponding mainstream standards, such as HELD and LoST.

Having VRS standards align with the NENA i3 Solution and the EAAC report and recommendations is also particularly important, because users must be able to use their everyday communications equipment for emergency calls (which will be direct to the PSAP, with sign language assistance in a three-way call, according to the EAAC report and recommendations). In the case of sign language users, it is reasonable to expect that this will be the equipment that they use for VRS and point-to-point video calls. If that equipment does not support these requirements because the VRS providers do not support the NG-9-1-1 standards, users would be forced to have a second set of equipment around dedicated only to emergency calls, which they would not be familiar with.

D. Standards Encourage Innovation

We disagree that requiring the VRS industry to follow a common set of **minimum** standards could have a detrimental effect on innovation. In fact, the opposite is true: it would give users the freedom to choose standards-compliant equipment that provides features and benefits beyond what the VRS-provided communications software and equipment supports. Currently, the pace of innovation in equipment and software of VRS users is limited to what the VRS industry itself is willing to contribute.

[6] Reply-to comments by Donna Platt and Richard Ray, PS Dockets 10-255 and 11-153, 02/10/2012, pp. 2-3.

However, there are many opportunities for improving the call experience of deaf and hard of hearing users, beyond the steps that have already been taken by various VRS providers, including but not limited to rate and bandwidth control, video encoding strategies, and strategies for maximizing speechreading performance. Having a set of open standards for interfacing with VRS would level the playing field for vendors and allow the pace of innovation to accelerate, because non-VRS-affiliated vendors would have the opportunity to enter the market and improve on what is available.

At the same time, we agree with the notion that there are some features specific to VRS users that are not of much potential interest to the mainstream. In addition, we noted previously that mainstream video calling software tends to make tradeoffs across frame rates, resolution, and image quality that are different from what is appropriate for sign language conversations[7]. For these reasons, it would be a mistake to disallow VRS providers to design and improve on videophone equipment to meet the specific needs of their customers.

The key point is that innovation in equipment for reaching VRS, and supporting the specific needs of sign language users, must not be limited to only VRS providers, but rather, must be open to any competitor who wishes to enter the field, irrespective of whether it is affiliated with the VRS industry. This cannot happen without an agreed set of open minimum standards, including standards for call setup, passing voice telephone numbers to the VRS provider, audio, video and text communications, and so on, to the extent that functional equivalence with mainstream telecommunications is maintained.

[7] Comments by the Telecommunication RERC, CG Dockets 10-51 and 03-123, 03/09/2012, p. 18

Note that following a **minimum** set of standards does not preclude VRS providers from innovating and supporting additional features beyond the minimum. New, and better standards could be added to the minimum set in the usual fashion through standardization efforts in the industry.

III. Conclusions

There is a huge opportunity for improving the interoperability of video relay services through the adoption of a comprehensive set of minimum standards. Doing so would also encourage innovation, because it would mean that advances in video calling equipment are no longer tied to the pace of innovation that is set by the VRS providers. Moreover, following the standards for emergency calling is mandatory – users must be able to call 9-1-1 (especially next-generation 9-1-1) through the same equipment that they use for everyday communication, and the mechanisms must work the same as they do for mainstream users, including the ability to have direct access to the PSAPs.

Respectfully submitted,

On behalf of the RERC-TA[8]:

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